NASA Procedural Requirements

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COMPLIANCE IS MANDATORY FOR NASA EMPLOYEES

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Subject: Aircraft Operations Management

Responsible Office: Office of Safety and Mission Assurance

Chapter 1. Flight Operations, General Overview

1.1 Concept of Operations

1.1.1 Where practical, NASA seeks to use aircraft/UAS that can support multiple mission requirements.

1.1.2 NASA shall use its aircraft/UAS resources in an effective and efficient manner to conduct and support missions, approved/planned programs, and projects. [1]

1.1.3 NASA shall maintain the level of airworthiness and aircraft/UAS operating standards that will ensure the safe operation of aircraft/UAS. [2]

a. Except for flights operated to carry individual(s) other than crewmember(s) or qualified non-crewmember(s) (QNC) or operated for commercial purposes, NASA and NASA-contracted aircraft shall be operated as public use aircraft in accordance with public law and U.S.C., regardless of whether the NASA or NASA-contracted aircraft possesses a Federal Aviation Administration's (FAA) Airworthiness Certificate (49 U.S. Code Part 40125). [3]

b. When operated as public use aircraft, NASA and NASA-contracted aircraft are flown under NASA's operational and airworthiness authority with mandatory safety oversight responsibilities.

1.1.4 NASA-controlled aircraft are subject to Federal Aviation Regulations with respect to the use of airspace, the control of air traffic, and aircraft registration. Aircraft on loan from the U.S. Armed Forces are not subject to civil registration. NASA aircraft shall be operated in accordance with applicable provisions of the FAR-14 CFR-except:

a. Where this directive prescribes more stringent requirements.

b. Where Center local directives are more stringent than this directive.

c. Where deviations from the FAA regulations have been approved by the FAA, a Center airworthiness/flight readiness review board, or NASA policy. [4]

1.1.5 For each Center operating aircraft/UAS or procuring and/or acquiring aircraft/UAS services, the Center Director shall maintain a program-independent Flight Operations Office, the specific purpose of which will be to plan, organize, direct, and control the operations, maintenance, modification, safety, and support of all Center-assigned or -contracted aircraft. [5]

1.1.5.1 The head of this office, the Chief of Flight Operations, is responsible for all Center-assigned, newly acquired or contracted aircraft. The head of this office shall be the senior line manager who is responsible for aviation activities at the Center. [6]

1.1.5.2 The Center Director shall assign the Chief of the Flight Operations Office the authority and responsibility and

provide the resources necessary to manage and conduct safe, effective, and efficient operations in accordance with NASA directives, guidance, and other applicable Federal regulations. [7]

1.1.5.3 Prior to issuance of an RFI (Request for Information) or RFP (Request for Proposal) solicitation, or award of a sole source contract, grant, or other aviation service procurement, the Chief of the Flight Operations Office shall review and concur upon any Center contract or agreement that includes aviation operations or aircraft modification. [8]

1.1.5.4 If a Center does not have a Flight Operations Department, the Center Director shall coordinate with NASA HQ Aircraft Management Division (AMD) to have another Center's Flight Operations Department review and concur on such contracts or agreements for them each time they procure aviation services. [9]

1.1.6 Centers should use alternative aviation fuels in fleet aircraft to the maximum extent possible consistent with the availability of approved alternative fuels and aircraft operating procedures or manuals for those aircraft.

1.2 Assignment of Authority and Responsibility

1.2.1 The Director, AMD shall assign aircraft to the appropriate Center after consultation with the affected Mission Directorates and Center Directors. [10]

1.2.1.1 Records created throughout flight operations management shall be maintained, managed, and disposed of by each Center's Flight Operations Office or designated office in accordance with NPR 1441.1. [11]

1.2.2 Mission Directorate Associate Administrators shall:

1.2.2.1 Coordinate early with the Office of Strategic Infrastructure (OSI) to establish program or project plans involving the requirement for acquisition or use of aircraft, including UAS meeting Agency capitalization threshold defined by NPR 9250.1. [12]

1.2.2.2 Comply with applicable OMB Circulars as they apply to the acquisition of aircraft/UAS and coordinate related documentation requirements with the Assistant Administrator for the OSI. [13]

1.2.2.3 Annually review aircraft mission and program requirements, use, and associated costs, and project those requirements and costs over 5 years in an annual report to the HQ AMD not later than March 31 of each year. [14]

1.2.2.4 Coordinate with the OSI and the Office of the Chief Financial Officer for the submission of all Aviation Business Cases per OMB Circular A-11 for aircraft and aircraft programs funded by their Directorate. [15]

1.2.3 Center Directors shall be responsible for:

a. The airworthiness and flight safety of all Center assigned aircraft and UAS, including commercial aircraft services (CAS). [16]

b. Coordination with the OSI in establishing program or project plans involving the requirement, assignment, and operation of aircraft/UAS. [17]

c. Annually reviewing aircraft mission and program requirements (for those programs controlled/funded by their respective Center), use, and associated costs and for projecting those requirements and costs over 5 years in an annual report to the AMD not later than March 31 of each year. [18]

d. Ensuring compliance with the OCFO NPRs in the appropriate use and application of order codes that are used to account for, track, and report aircraft costs. [19]

e. Quarterly reporting of aircraft operations and costs to AMD, as stipulated in Chapter 11, and specific monthly passenger transportation reporting requirements detailed in Chapter 4. [20]

f. Ensuring compliance with 41 CFR Part 102-33, 4l CFR Chapter 301, and OMB Circular A-126, Improving the Management and Use of Government Aircraft. [21]

g. The budget for personnel and travel in support of the Inter-Center Aircraft Operations Panel (IAOP) semiannual meetings and the IAOP Review Program. [22]

h. Approving aircraft charters or leases for periods aggregating 30 days or less per year with 7 days' prior notice to the AMD. [23]

i. Technical assessment, cost evaluation, acquisition, use, and disposition of all aircraft/UAS under their control. This includes disposal of aircraft/UAS used solely in wind tunnels or other nonflyable test models. [24]

j. Coordinating and submitting all aircraft acquisition and disposition proposals to the Director, AMD for approval. [25]

k. Reporting all acquisition and disposal actions to the AMD to comply with Federal aircraft data reporting requirements. [26]

l. Ensuring that Center managers who acquire aircraft/UAS or commercial aviation services coordinate those acquisitions with the Center's Chief of Flight Operation Office to ensure compliance with the NASA Aviation Safety Program and aircraft management policies. If the Center does not have a Flight Operations Office, prior coordination will be conducted with the AMD. [27]

1.2.4 Program/Project Managers shall:

a. Coordinate early with the Center Chief of Flight Operations expected to conduct the effort to establish program or project plans involving the requirement for acquisition or use of aircraft, including UAS. [28] This coordination will be initiated prior to any RFI/RFP release or procurement action for aircraft or aviation services. This includes a CAS effort contracted by a contractor under NASA contracted effort. For Centers without a Flight Operations Office, coordination with another Center's Flight Operations as designated by AMD is required.

b. Support the Mission Directorate or Center Director in the preparation of a Business Case Analysis (BCA) in accordance with OMB Circular A-11, as required. [29]

c. Support the Mission Directorate and Center Directors in the annual review of aircraft mission and program requirements, use, and associated costs, and project those requirements and costs over 5 years to support their annual report to the AMD, not later than March 31 of each year. [30]

1.2.5 Center's Chief of Flight Operations

1.2.5.1 The Center's Chief of Flight Operations is the senior line manager with authority over all flight activities operated or controlled by the Center, including CAS operations, and is directly responsible to the Center Director for the safe and effective conduct of those activities. The Center's Chief of Flight Operations shall hold the following qualifications for assignment to this position:

a. A minimum of 10 years of relevant aviation-related experience, of which a minimum of 3 years will be supervisory or managerial experience in aircraft operations similar to the primary aircraft type operated at the Center, and a high level of familiarity with the organization's aircraft operations.

b. Current or previously held qualifications as a NASA Pilot in Command (PIC), a military rating as an Aircraft Commander, or a FAA Airline Transport Pilot (ATP) certificate. [31]

1.2.5.2 The Center's Chief of Flight Operations is authorized to fly Center aircraft.

1.2.5.3 The Center's Chief of Flight Operations shall perform the following duties:

a. Ensure the effective management of flight operations under that Center's cognizance, per NPD 7900.4. [32]

b. Implement a process to ensure all CAS operations are appropriately approved. [33]

c. Authorize personnel to operate and maintain aircraft under NASA's control. The Center Flight Operations Office has the final operational flight release authority for any NASA aircraft operating from or under the cognizance of that Center. [34]

d. Determine the number of aircraft types in which an individual crewmember may maintain qualification at any given time and annually review that determination. [35]

e. Recommend assignment of the Center Aviation Safety Officer (ASO), with the concurrence of the Center Safety and Mission Assurance Director, to the Center Director for approval. [36]

f. Fly as a crewmember or observer on all assigned aircraft, where practicable and as necessary, to observe performance of assigned flightcrews. [37]

1.2.6 Center Aviation Safety Officers

1.2.6.1 The ASO shall manage the Center's Aviation Safety Program as described in Chapter 6. [38]

1.2.6.2 The ASO shall be a civil servant assigned to the Flight Operations Office, serve as the Center's focal point for aviation safety, and act on behalf of the Center Director when discharging this responsibility. 39 The ASO will advise the Chief of Flight Operations regarding safety issues and concerns within the organization.

1.2.6.3 Managers may use the advice of the ASO in formulating decisions, but shall not expect or rely on the ASO to make managerial decisions. [40]

1.2.6.4 If a safety concern has not been dealt with sufficiently by the Flight Operations organization, the ASO may take the concern directly to the Center Director. In addition, the ASO may take the concern to the Chief, Office of Safety and Mission Assurance or the Director, AMD.

1.2.6.5 The ASO will meet NASA PIC qualifications and the requirements in paragraph 6.2.8.

1.2.7 Chief Pilot

1.2.7.1 To qualify for assignment, the Chief Pilot shall:

a. Hold and maintain qualification as a NASA PIC.

b. Have at least 3 years' experience within the past 6 years as PIC of an aircraft similar in category and class to at least one of the aircraft used in the types of operations being conducted at the Center.

c. Demonstrate satisfactory supervisory and managerial capabilities. [41]

1.2.7.2 Specific duties will be defined by the Chief of Flight Operations at the respective NASA Center.

1.2.8 The Chief of Maintenance shall be a civil servant assigned to the Flight Operations Office and serve as the Chief of Flight Operations' focal point for all aircraft maintenance activities. [42].

1.2.8.1 To qualify for assignment, the Chief of Maintenance shall:

a. Have had at least 3 years of experience within the past 6 years in aircraft maintenance in a similar-size operation maintaining aircraft similar to those used by the Center, with management experience such as supervisor or lead in aircraft maintenance.

b. Have held an FAA Airframe and Power Plant (A&P) Certification, have held an equivalent military designation, or demonstrate an equivalent level of qualifications and expertise. [43]

1.2.8.2 Duties will be defined by the Chief of Flight Operations.

1.2.9 The Chief of Quality Assurance or Quality Inspection shall be a civil servant assigned to the Flight Operations Office and serve as the Chief of Flight Operations' focal point for all aircraft quality assurance activities. [44]

1.2.9.1 To qualify for assignment, the Chief of Quality Assurance or Quality Inspection shall:

a. Hold a current FAA Inspection Authorization Certificate, have held an equivalent military designation, or demonstrate an equivalent level of qualifications and expertise.

b. Maintain a level of inspection expertise and activity needed to meet FAA Inspection Authorization Certificate renewal requirements or the military equivalent.

c. Have had at least 3 years of maintenance experience within the last 6 years, 1 year of which shall have been as a maintenance inspector.

d. Have at least 1 year of experience in a supervisory capacity. [45]

1.2.9.2 Duties will be defined by the Chief of Flight Operations.

1.2.10 The IAOP shall:

a. Advise the Assistant Administrator for the OSI regarding operational, management, and safety policies for NASA aircraft. [46]

b. Conduct periodic meetings with the HQ AMD to review policies and procedures related to aircraft/UAS operational matters affecting all Centers and to make recommendations to the AMD regarding policies, procedures, and guidelines that may be applicable to all Centers. [47].

c. Conduct reviews of a special nature at the request of the Assistant Administrator for the OSI and support the conduct of periodic reviews of all aspects of flight operations at NASA Centers, including compliance with applicable Federal regulations and Headquarters and Center policies and procedures. [48].

1.2.11 Aircraft Advisory Committee (AAC): Director, AMD is designated as the Agency-level capability lead for NASA Aircraft Operations. The AAC is established to advise AMD regarding identification of aircraft requirements, prioritization of capability verses requirements, gap analysis for strategic investment, and plans/roadmaps. The AAC will be chaired by Director, AMD and the IAOP will provide the core membership. Additional members include:

a. Aeronautics Research Mission Directorate.

b. Science Mission Directorate.

c. Human Exploration and Operations Mission Directorate.

d. Space Technology Mission Directorate.

e. Office of Safety and Mission Assurance.

f. Office of the Chief Engineer.

1.2.12 The Director of AMD shall:

a. Coordinate the formulation of Agency-wide policies, procedures, and guidelines concerning aircraft/UAS operation and ensure their effective and efficient communication to Centers and appropriate Headquarters offices. [49]

b. Advise and assist the Assistant Administrator for the OSI, the Mission Directorates, and the Center Directors concerning the acquisition and disposition process. [50]

c. Advise the Assistant Administrator for the OSI regarding the establishment of policy for the use of NASA aircraft and UAS. [51]

d. Coordinate the findings and recommendations of IAOP reviews dealing with institutional management issues with the appropriate institutional Associate Administrator. [52]

e. Maintain liaison with other Government agencies and the private sector on matters pertaining to flight operations, maintenance, airworthiness, and aviation management practices common to all Centers. [53]

f. Provide coordination and other assistance in the assignment of IAOP teams as they review and evaluate the adequacy of Center organizations, facilities, and procedures for flight operations. [54]

g. Collect, collate, and report Agency aircraft data (e.g., Federal Aviation Interactive Reporting System (FAIRS) data) to GSA or other Federal agencies as required. [55]

h. Be responsible for the functional leadership, staff support to the Administrator, and central services as they relate to aircraft management and is the Agency's Aircraft Capability Leader and the Senior Aviation Management Official (SAMO) as required by Federal Management Regulation (FMR) 102-33.30. [56]

i. Be responsible for Aviation Safety Policy implementation and functional oversight.

1.2.13 The Chief, Office of Safety and Mission Assurance shall provide leadership, policy direction, functional oversight, assessment, standards, and coordination for safety and mission assurance affecting NASA's aviation operations. [57]

1.3 Operational Use

1.3.1 NASA's aircraft are generally used for research and development, program support, and passenger transportation, and many NASA aircraft fly multiple missions. NASA maintains only the number of aircraft to enable the Agency to meet its mission requirements that are linked to the Agency's Strategic Plan.

1.3.2 NASA's aircraft perform missions that include, but are not limited to:

a. Research and Development (R&D). R&D operations are a means for NASA's Mission Directorates to conduct research at various altitudes and atmospheric conditions. R&D operations are flown to advance aeronautics research, earth and space science, space exploration, and science technology demonstration.

b. Program Support (PS). PS operations enable the accomplishment of NASA's program objectives. Such use includes, but is not limited to, astronaut training, safety chase, photo chase, cargo transport, flightcrew training, range surveillance, launch security, launch and landing weather reconnaissance, contingency support, and command and control.

c. Passenger Transportation. Use of NASA aircraft for passenger transportation allows NASA personnel to meet mission-required travel needs, as defined in OMB Circular A-126 and this NPR. Passenger transportation flights may be classified as "Mission Required" only when failure to use a NASA aircraft would have a clear, negative impact on a NASA operational mission, prevent timely response to an aircraft or spacecraft accident, or threaten the health and safety of NASA personnel, and only when such travel could not be conducted using commercial airlines, charter aircraft service, or ground transportation to fulfill that mission need.

1.4 International Aircraft Operations

1.4.1 State Aircraft. NASA aircraft are operated in international airspace either under ICAO flight rules, foreign diplomatic clearances, and/or due regard, per U. S. Department of State guidance in DOS letter of June 29, 1994, and DOS e-mail dated March 31, 2003.

1.5 Special Operational Requirements

1.5.1 Each NASA aircraft shall be operated in accordance with an aircraft manual providing standard operating procedures. [58]

a. For manned aircraft, these manuals (or checklists) shall be available electronically or carried onboard all NASA aircraft. [59]

b. For unmanned aircraft, manuals shall be immediately accessible to the pilots. [60].

1.5.2 All NASA Flight Operations flight planning libraries shall have available the necessary Flight Information Publications for U.S. and international operations. [61]

1.5.3 Each Center shall have a program for their aircrews to maintain a level of proficiency that will ensure their ability to safely operate an aircraft within governing regulations to include abnormal and emergency situations. [62]

1.5.4 Each Center shall establish and maintain a training program using check flights to assess its adequacy and ensure that personnel are competent to perform their assigned duties. [63]

1.6 Waivers

1.6.1 When deviations from this NPR are necessary, Center Directors or Associate Administrators shall submit requests for waivers to the Assistant Administrator for the OSI via HQ AMD. [64]

1.6.1.1 Prior written approval from the Assistant Administrator for the OSI shall be obtained before implementing procedures that are less restrictive than those contained in this NPR. [65]

1.6.2 Only the Administrator or Assistant Administrator for the OSI, who is responsible for this NPR, or delegated authority may waive requirements contained in this NPR.

1.6.2.1 When deviations from this NPR pertaining to Aviation Safety are necessary, AMD will notify Chief, Safety and Mission assurance of any waivers granted.

1.6.3 A waiver may be approved only if it meets all of the following criteria:

a. It is not prohibited by Federal policy.

b. It would not present an undue risk to public health, safety, the environment, or personnel.

c. It is justified under the particular circumstances.

1.6.4 The waiver approval authority shall approve waivers only for a specific event, period, or duration and specify the boundaries of the requirements being waived. [66]

1.6.5 The waiver approval authority shall review all who have current waivers against this NPR when the NPR is updated and request verification of continued validity. [67]

1.6.6 NASA officials who request waivers shall document the following in the request for waiver:

a. Identification of the directive and specific requirement(s) for which the waiver is requested.

b. Scope (e.g., site, facility, operation, or activity) and duration of the waiver request.

c. Justification for the waiver, including:

(1) Purpose/rationale for requesting the waiver.

(2) Whether application of the requirement in the particular circumstances would conflict with another requirement.

(3) Whether application of the requirement in the particular circumstances would not achieve, or is not necessary to achieve, the underlying purpose of the requirement.

(4) Any other pertinent data or information related to the waiver request (e.g., cost or schedule considerations).

(5) Identification and justification of the acceptance of any additional risk that will be incurred if the waiver is granted.

(6) A description of any special circumstances that warrant granting the waiver, including whether:

(a) Application of the requirement in the particular circumstances would not be justified by any safety and health reason.

(b) The waiver would result in a health and safety improvement that compensates for any detriment that would result from granting the waiver.

(c) There exist any other material circumstances that were not considered when the requirement was adopted, for which it is in the public interest to grant a waiver.

(7) A description of any alternative or mitigating action that will be taken to ensure adequate safety and health and protection of the public, the workers, and the environment for the effective period of the waiver. [68]

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